**Lab 9**

**Q1.** Create a simple line plot showing the relationship between two lists:

python

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x = [1, 2, 3, 4, 5]

y = [1, 4, 9, 16, 25]

* Use plt.plot() to visualize the data.
* Add a title, x-axis, and y-axis labels to the plot.

**Q2.** **Scatter Plot**:

* Generate random data for a scatter plot, using 50 random x and y values.
* Plot the data points as a scatter plot using plt.scatter().
* Add a title and label the axes.

**Q3**. **Bar Plot**: Create a bar plot showing the scores of five students in a test:

students = ['Alice', 'Bob', 'Charlie', 'Diana', 'Eve']

scores = [88, 92, 79, 85, 90]

* Use plt.bar() to create the plot, label the x-axis with student names, and the y-axis with scores.
* Customize the bar color and add labels.

**Q4**. **Histogram**:

* Generate random data for 100 test scores (between 50 and 100).
* Plot a histogram to show the distribution of scores using plt.hist().
* Set appropriate bin sizes to observe patterns in the distribution.

**Q5**. **Customizing Plots**:

* Choose one of the plots above and customize it by:
  + Changing line styles, colors, or markers.
  + Adding grid lines.
  + Adding annotations (e.g., marking a point on a line plot).

**Q6**. **Box Plot**:

* Generate two sets of random data, each representing scores of students from two different classes in a test. Each set should have 50 scores, ranging from 60 to 100.
* Use plt.boxplot() to create a box plot for these two classes.
* Label the x-axis with the class names and the y-axis with the score range.

**Q7.** Five salespeople sold three different products (A, B, and C) over a month. The number of products sold by each salesperson is given below:

* salespeople = ['Alice', 'Bob', 'Charlie', 'Diana', 'Eve']
* product\_A = [30, 25, 35, 20, 30]
* product\_B = [20, 30, 15, 25, 20]
* product\_C = [25, 15, 20, 30, 25]

 Use plt.bar() to create a stacked bar plot that shows the total sales for each salesperson, with each product type represented in different colors.

 Label each section of the bars and add a legend to explain the color-coding.

**Save your code and plots in a Jupyter Notebook**